**WASHINGTON DEPARTMENT OF ECOLOGY**

**ENVIRONMENTAL ASSESSMENT PROGRAM**

**FRESHWATER MONITORING UNIT**

**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 35M100

**STATION NAME:** Deadman Creek near Gould City

**WATER YEAR:** 2011

**AUTHOR:** Mitch Wallace

## Introduction

Watershed Description

Deadman Creek is a left-bank tributary to the Snake River, opposite Central Ferry State Park. The creek drains the fertile agricultural highlands flanking the southern breaks of the Snake River in its northernmost bend into Washington State.

Gage Location

The station is located on the right side of the stream at the Deadman Creek road bridge, approximately 2.0 miles downstream from the confluence of the north and south forks of Deadman Creek.

Table 1. Basin Area and Legal Description

| | |
|---|---|
| Drainage Area (square miles) | 77 (USGS) |
| Latitude (degrees, minutes, seconds) | 46° 36' 0" N |
| Longitude (degrees, minutes, seconds) | 117° 36' 0" W |

Table 2. Discharge Statistics.

| | |
|---|---|
| Mean Annual Discharge (cfs) | 4.6 |
| Median Annual Discharge (cfs) | 3.6 |
| Maximum Daily Mean Discharge (cfs) | 11 |
| Minimum Daily Mean Discharge (cfs) | 1.8 |
| Maximum Instantaneous Discharge (cfs) | 15 |
| Minimum Instantaneous Discharge (cfs) | 0.50 |
| Discharge Equaled or Exceeded 10 % of Recorded Time (cfs) | 8.1 |
| Discharge Equaled or Exceeded 90 % of Recorded Time (cfs) | 2.6 |
| Number of Days Discharge is Greater Than Range of Ratings | 17 |
| Number of Days Discharge is Less Than Range of Ratings | 0 |
| Number of Un-Reported Days | 17 |
| Number of Days Qualified as Estimates | 181 |
| Number of Modeled Days | 0 |

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Table 2 Discussion (Discharge Statistics)

| |
|---|
| The unreported days are due to rating curve exceedances.<br><br>Nine discharge measurements were taken throughout the water year, ranging from 2.5 to 7.9 cfs. |

Table 3. Error Analysis Summary.

| | |
|---|---|
| Potential Logger Drift Error (% of discharge) | 7.0 |
| Potential Weighted Rating Error (% of discharge) | 11.9 |
| Total Potential Error (% of discharge) | 18.9 |

Table 3 Discussion (Error Analysis)

| |
|---|
| Potential logger drift occurs when differences exist between logger and primary gage index readings. |

Table 4. Stage Record Summary

| | |
|---|---|
| Minimum Recorded Stage (feet) | 4.76 |
| Maximum Recorded Stage (feet) | 5.32 |
| Range of Recorded Stage (feet) | 0.56 |

Table 4 Discussion (Stage Record)

| |
|---|
| In early March, 2011 a high flow event occurred. This event silted in the terminal end. This led to periods throughout the remainder of the water year in which the recorded logger data were very noisy with large upward spikes. The suspect data were removed and filled with regressed data from another Ecology gaging station. This is also the cause of the high number of estimated days listed in discharge statistics table above. |

Table 5. Rating Table Summary

| Rating Table No. | 11 | 12 | 13 |
|---|---|---|---|
| Period of Ratings | 10/1/10 to 10/6/10 | 10/1/10 to 3/21/11 | 2/28/11 to 7/25/11 |
| Range of Ratings (cfs) | 0.20 to 12 | 0.14 to 8.7 | 0.07 to 16 |
| No. of Defining Measurements | 8 | 11 | 7 |
| Rating Error (%) | 12.0 | 12.6 | 12.5 |

| Rating Table No. | 111 | 14 | 112 |
|---|---|---|---|
| Period of Ratings | 6/13/11 to 8/29/11 | 7/25/11 to 9/30/11 | 8/29/11 to 9/30/11 |
| Range of Ratings (cfs) | 0.20 to 12 | 0.14 to 19 | 0.20 to 12 |
| No. of Defining Measurements | 8 | 1 | 8 |
| Rating Error (%) | 12.0 | 8.5 | 12.0 |

| Rating Table No. | | | |
|---|---|---|---|
| Period of Ratings | | | |
| Range of Ratings (cfs) | | | |
| No. of Defining Measurements | | | |
| Rating Error (%) | | | |

Table 5 Discussion (Rating Tables)

This site is very susceptible to leaf litter accumulation on the control. This can lead to multiple rating shifts in the fall and early winter.

Table 6. Model Summary

| | |
|---|---|
| Model Type (Slope conveyance, other, none) | n/a |
| Range of Modeled Stage (feet) | n/a |
| Range of Modeled Discharge (cfs) | n/a |
| Valid Period for Model | n/a |
| Model Confidence | n/a |

Table 6 Discussion (Modeled Data)

| |
|---|
| |

Table 7. Survey Type and Date (station, cross section, longitudinal)

| Type | Date |
|---|---|
| n/a | n/a |

Table 7 Discussion (Surveys)

| |
|---|

Activities Completed

| |
|---|

Appendix